Claims

1.      A method for optimising at least one property of a satellite system,
said satellite system comprising:

5    •    a satellite provided with a transmitter for transmitting an satellite signal
        representing data and
     •    a satellite receiver for receiving said satellite signal,
     said method comprising:
     •    receiving at said satellite receiver the satellite signal;
10   •    determining from the satellite signal said data;
     •    checking the data for data errors; and
     •    changing said at least one property of the satellite system if a result of said
        checking satisfies a predetermined criterion.


15   2.      A method as claimed in claim 1, wherein said at least one property
comprises at least one property of the satellite receiver.


3.      A method as claimed in claim 1 or 2, wherein said at least one property
relates to a polarisation of the satellite receiver.
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4.      A method as claimed in claim 3, wherein said polarisation is a linear
polarisation or a circular polarisation.


5.      A method as claimed in any one of the preceding claims, wherein the
25   satellite receiver comprises an antenna array with at least two antenna
elements


6.      A method as claimed in claim 5, wherein said antenna array comprises
an electrically tunable antenna array.
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7.      A method as claimed in claim 5 or 6, wherein said antenna array
comprises a phased array antenna.

8.      A method as claimed in any one of claims 5-7, further comprising:
calibrating at least one antenna element
and wherein said at least one property comprises at least one of: the gain and/or
the phase and/or electrical delay of said at least one antenna element.

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9.      A method as claimed in any one of the claims 2-8, comprising
optimising at least one property of an antenna beam of the satellite receiver

10.     A method as claimed in claim 9, further comprising changing the
10   amplitude of the satellite signal before determining said data from the satellite
signal.

11.     A method as claimed in any one of the preceding claims, wherein said at
least one property comprises a property of said transmitter.

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12.     A method as claimed in any one of the preceding claims, wherein the data
represented by the satellite signal are encoded data encoded by means of a
coding algorithm and wherein said determining data errors comprises:
decoding the data with a suitable decoding algorithm and determining data
20   errors from said decoded data.

13.     A method as claimed in claim 12, wherein the data is encoded with an
MPEG-2 compliant coding algorithm, such as an algorithm according to the
DVB standard.

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14.     A method as claimed in claim 12 or 13, wherein the data is encoded with
a forward error correction coding algorithm.

15.     A method as claimed in any one of claims 12-14 , wherein the data is
30   encoded with a Viterbi coding algorithm.

16.     A method as claimed in any one of claims 12-15, wherein the data is
encoded with a Reed-Solomon coding algorithm.

17.    A method as claimed in any one of the preceding claims, wherein said result satisfies said predetermined criterion if a ratio of an amount of data errors relative to an amount of data exceeds predetermined a threshold value.

18.    A method as claimed in claim 17, wherein said ratio is the bit error ratio.

19.    An optimisation device for a satellite system, comprising
an optimisation input connectable to at least one signal output of at least one satellite receiver for receiving at least one satellite signal representing data;
a data error determining section communicatively connected to the optimisation input, for determining data errors in said data;
a comparator for comparing the data errors with a predetermined criterion, said comparator having a comparator output for providing a signal if the data error satisfies said predetermined criterion;
an adjuster device for adjusting at least one property of the satellite system in response to an adjust signal from the comparator output.

20.    An satellite receiver, comprising
at least one antenna element;
at least one control device arranged for controlling at least one property of at least one of the antenna elements; said control device having an input for receiving a control signal and an output connected to a control input of the antenna element;
at least one optimisation device as claimed in claim 19 communicatively connected with its optimisation input to a signal output of the antenna element and connected with an optimisation output to the input of the control device.

21.    A satellite system comprising a satellite with a signal source arranged for transmitting a satellite signal representing binary data and further comprising at least one satellite receiver as claimed in claim 20 for receiving the satellite signal.

22.    A computer program product, comprising a program code enabling a programmable device to perform steps of a method as claimed in any one of claims 1-18 when run on said programmable device.